

*Patent Application Serial No. 10/554,400
Reply to Office Action dated May 12, 2008*

REMARKS

Claim 1 is amended for clarity and now reads as follows:

1. A device (30) giving indications to the operator of a work machine which works on a construction surface of a current work object, monitoring at least one reference marker located in the vicinity of the construction surface, characterized in comprising:

an acting component of the work machine that acts directly on the construction surface of the current work object;

a measurement device (20) to measure the position of the construction surface of the current work object, the position of the reference marker, and the position of the acting component, while said work machine is performing work;

a reference point detection unit (102) to detect the reference point corresponding to the reference marker disposed in the vicinity of said construction surface;

a virtual line calculation unit (104) to calculate from the reference point a virtual line, passing through the reference point and corresponding to a construction surface target line that is to be formed by the acting component;

a display data creation unit (110) to create display data to display images indicating the positions of at least said construction surface and said virtual line, on the basis of said positions measured by said measurement device and said virtual line calculated by said virtual line calculation unit; and

a display device (34) to receive said display data from said display data creation unit and display said images to the operator on a display screen.

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Claim 13 is canceled without prejudice to reentry.

New dependent claim 15, and similar claim 16 depending from independent method claim 14, are supported in paragraph 0044; the specification discloses other alternatives, such as those described in paragraph 0050. New claims 19 and 20 are supported in paragraph 0067, which states that two reference points 22a-22b can be entered by hand on the operator's screen. New claims 17 and 18 are supported in paragraph 0082.

The new claims are patentable for the reasons below.

In response to the outstanding Office Action:

(1) Claims 1-11, 13, and 14 are rejected under 35 U.S.C. §102(b) as being anticipated by Savard, US 6,736,216. This rejection is respectfully traversed.

Savard uses a camera 28 that images both the work implement and a laser-spot image I produced by a laser 38 (col. 1, lines 56-57). In one embodiment, there are two laser beams 56a, 56b which converge horizontally (Fig. 2a) but the beams are collinear vertically (Fig. 2b); the beams' intersection is the image I. The camera can sense the position of image point I (col. 3, line 56 to col. 4, line 8) and also the position of the bucket; using these positions, the device creates an image like that of Fig. 9, which guides the user. Alternate embodiments use a horizontal laser beam imaged by two cameras (col. 5, lines 5-16; Figs. 5a-5b), or a laser beam creating an image I on a string S (col. 6, lines 18-27 ;Fig. 7).

With respect, the Examiner is incorrect in asserting that Savard discloses the claimed *"virtual line calculation unit (104) to calculate from the reference point a virtual line, passing through the reference point and corresponding to a construction surface target line that is to be*

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formed by the acting component [and] display images indicating the positions of at least said construction surface and said virtual line ...to the operator on a display screen."

The Examiner asserts that this is disclosed in Savard at col. 4, lines 22-30, which is text describing the embodiment of Fig. 2a mentioned above. However, the applied text of Savard only discloses that the image I, which is the intersection *point* of the two laser beams (it is not a line), is moved to a "desired" location—that is, a location chosen by the user. No *line* is calculated, only the *angles* needed to locate the laser intersection point I where the user desires it. Furthermore, no line is *displayed*.

The Applicants respectfully submit that no virtual line is either calculated or displayed by Savard, and therefore the claims are patentable over Savard.

(2) Claim 12 is rejected under 35 U.S.C. §103(a) as being obvious over Savard in view of Yokota US 2002/0183924. This rejection is respectfully traversed, *inter alia*, on the basis of the remarks above.

(3) Savard is contrary to new dependent claims 15 and 16. Savard repeatedly states that its laser is "non-rotating" (e.g., col. 1, lines 38 and 49; col. 2, line 65; col. 5, line 37; claim 1 at col. 7, line 8). The other new claims are patentable, *inter alia*, by their dependence.

In view of the aforementioned amendments and accompanying remarks, the application is submitted to be in condition for allowance, which action, at an early date, is requested.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the undersigned attorney at the telephone number indicated below to discuss this case.

Respectfully submitted,

KRATZ, QUINTOS & HANSON, LLP



Nick S. Bromer
Attorney for Applicant
Reg. No. 33,478

NSB/lrj

Suite 400
1420 K Street, N.W.
Washington, D.C. 20005
(202) 659-2930

23850

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I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571-273-8300) on September 7, 2008.

Nick Bromer (reg. no. 33,478)

Signature Nick Bromer

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